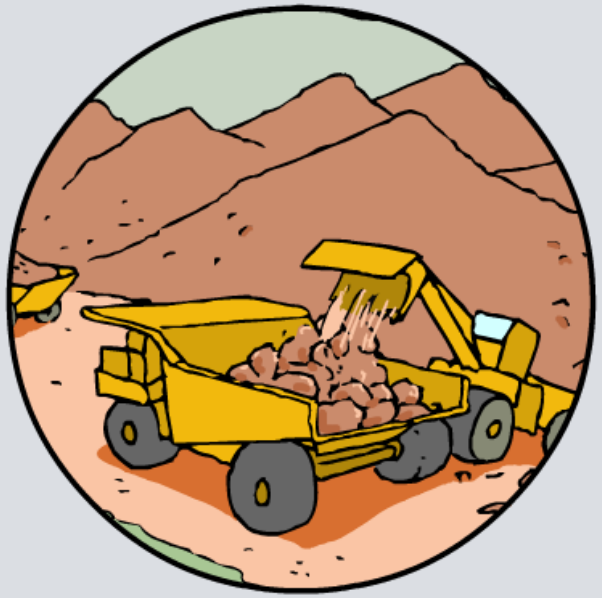
The Impact of Mining



How does extraction affect the environment?

Open-cast mining removes ores using explosives. It produces dust and can scar the landscape. This disused copper mine in Ajo, Arizona, measures one mile wide.

Extracting metals causes huge amounts of waste. Copper production discards 99.5% of the extracted ore.

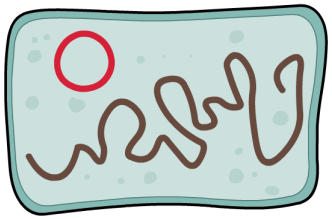
Harmful waste gases, including sulfur dioxide, carbon dioxide and carbon monoxide, are produced by extraction.

Extraction, especially electrolysis, also uses lots of electricity.

How can the impacts of extraction be reduced?

New mining techniques can decrease the effects of metal extraction on the environment.

- **Leaching** uses less electricity than traditional mining and does not produce waste gases. Copper ores are treated with and dissolved in dilute sulfuric acid, producing copper sulfate. Electrolysis is then used to extract the copper. Certain bacteria can also be used to dissolve ores and form copper sulfate.



- **Phytomining** uses plants to absorb metals from the soil. The process can be used to clean contaminated land. Treating the plants with certain chemicals increases their ability to accumulate minerals in their cells.

How can recycling help?

Metals are easier to recycle than plastic, and they retain their original properties, such as conductivity and hardness.

- Recycling uses up to 95% less electricity than producing metals from ores.
- Recycling costs less than extracting metals and can be profitable.
- Recycling creates less waste and reduces the number of sites that have to be mined.

One problem is that metallic materials in recycled objects are often mixtures of different metals. This can mean that obtaining pure metals from recycling is more expensive, as it may use more electricity than extracting metals from ores.

Extraction voting activity

Should the amount of metal extraction be restricted?

0 yes

0 no

0 unsure